

REMEDIAL SITE ASSESSMENT DECISION - EPA NEW ENGLAND

Site Name: Dell Manufacturing Company EPA ID#: CTD001139336

Alias Site Names: _____

Address: Four Right Lane City: Farmington State: CT

Refer to Report Dated: 07-11-97 Report type: SIP

Report developed by: RFW /CoE

DECISION:

☐ 1. Further Remedial Site Assessment under CERCLA (Superfund) is not required because:

☐ 1a. Site does not qualify for further remedial site assessment under CERCLA
(No Further Remedial Action Planned - NFRAP)

☐ 1b. Site may qualify for further action, but is deferred to:

☐ RCRA
☐ NRC

☒ 2. Further Assessment Needed Under CERCLA:

2a. (optional) Priority: ☒ Higher ☐ Lower

2b. Activity Type: ☐ PA ☐ SI ☐ ESI ☐ HRS evaluation

☒ Other: Further evaluation needed

DISCUSSION/RATIONALE:

There is a potential release to the surface water and potential contamination of surface water targets.

There has been a release to groundwater and contamination of groundwater targets.

Report Reviewed
and Approved by:

Don Smith Signature:  Date: July 11, 1997

Site Decision
Made by:

Don Smith Signature:  Date: July 11, 1997

**FINAL SITE INSPECTION PRIORITIZATION REPORT
FOR
DELL MANUFACTURING COMPANY
FARMINGTON, CONNECTICUT**

CERCLIS No. CTD001139336

TDD No. 9409-01-CWX

Delivery Order No. 0002

Prepared by:

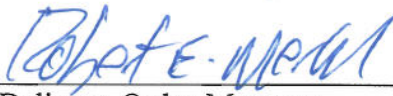
Roy F. Weston, Inc.
67 Batterymarch Street
Boston, Massachusetts 02110

July 11, 1997

ROY F. WESTON, INC.
Reviewed and Approved:


Task Manager


Date


Delivery Order Manager
(or designee)


Date


QA Review


Date

Work Order No. 10971-002-001-0007

DISCLAIMER

This report was prepared solely for the use and benefit of the U.S. Environmental Protection Agency Region I (EPA Region I) Office of Site Remediation and Restoration for the specific purposes set forth in the contract between the U.S. Army Corps of Engineers New England Division and Roy F. Weston, Inc. (WESTON®). Professional services performed and reports generated by WESTON have been prepared for EPA Region I purposes as described in the contract. The information, statements, and conclusions contained in the report were prepared in accordance with the statement of work, and contract terms and conditions. The report may be subject to differing interpretations or misinterpretation by third parties who did not participate in the planning, research or consultation processes. Any use of this document or the information contained herein by persons or entities other than the EPA Region I shall be at the sole risk and liability of said person or entity. WESTON therefore expressly disclaims any liability to persons other than the EPA Region I who may use or rely upon this report in any way or for any purpose.

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INTRODUCTION

Roy F. Weston, Inc. (WESTON®) was requested by the U.S. Environmental Protection Agency Region I (EPA Region I) Office of Site Remediation and Restoration to perform a Site Inspection Prioritization (SIP) of the Dell Manufacturing Company (Dell) property in Farmington, Connecticut. Tasks were conducted in accordance with the SIP scope of work and technical specifications provided by the EPA Region I. A Screening Site Inspection (SSI) Report for the Dell property was prepared by the NUS Field Investigation Team (NUS/FIT) on June 26, 1990. NUS/FIT documented the disposal of metal chips, cutting and water soluble oils, 1,1,1-trichloroethane (1,1,1-TCA), cadmium, potassium cyanide, and acid rinse water wastes on the property. On the basis of the information provided in the SSI Report, the Dell SIP was initiated.

EPA Region I has also requested WESTON to perform SIP investigations on 15 facilities, including Dell, which are located within and adjacent to the Farmington Industrial Park (FIP) in Farmington and Plainville, Connecticut. For the purposes of this report, these fifteen facilities will be referred to as the FIP area.

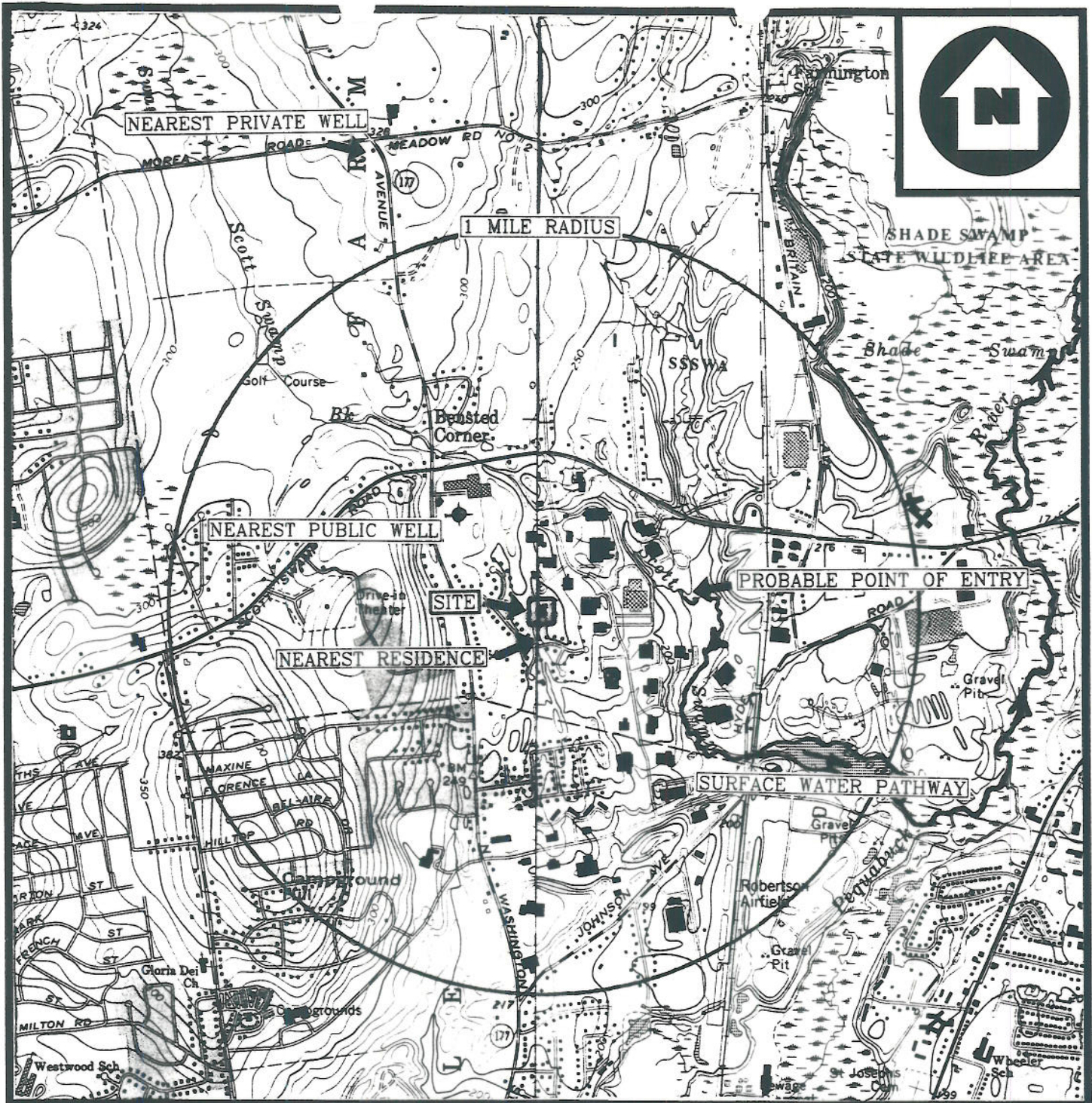
Background information used in the generation of this report was obtained through file searches conducted at EPA Region I and the Connecticut Department of Environmental Protection (CT DEP), telephone interviews with town officials, conversations with persons knowledgeable of the Dell property and conversations with other Federal, State, and local agencies. Additional information was gathered during the WESTON on-site reconnaissance on April 18, 1995 and environmental sampling on July 12, 1995.

This package follows the guidelines developed under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), as amended, commonly referred to as Superfund. These documents do not necessarily fulfill the requirements of other EPA regulations such as those under the Resource Conservation and Recovery Act (RCRA) or other Federal, State, or local regulations. SIPs are intended to provide a preliminary screening of sites to facilitate EPA Region I's assignment of site priorities. They are limited efforts and are not intended to supersede more detailed investigations.

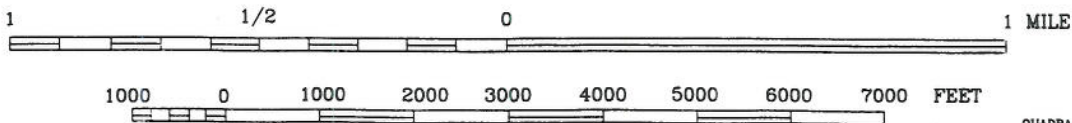
SITE DESCRIPTION

The Dell property is located at 4 Right Lane, Farmington, Hartford County, Connecticut (Figure 1A). According to Farmington Town Assessor's Maps Nos. 76 and 77, Dell is located at Lot No. 21 [4]. The property has been occupied by Dell since 1967 and is currently

Note: Text which appears in italics indicates original portions of the Screening Site Inspection Report which were either copied or paraphrased.



BASE MAP IS A PORTION OF THE FOLLOWING 7.5' U.S.G.S. QUADRANGLE(S):
 NEW BRITAIN, CT, 1966, PHOTOREVISED 1992; BRISTOL, CT, 1966, PHOTOREVISED 1984



QUADRANGLE LOCATION: NEW BRITAIN, CONNECTICUT

LOCATION MAP

DELL MANUFACTURING COMPANY
 FARMINGTON, CONNECTICUT



FIGURE 1A

owned by Seragon Associates. The entrance to the property from Right Lane is located at geographic coordinates 41° 42' 04.7" North latitude and 72° 52' 28.7" West longitude [2].

The property is approximately six acres and is occupied by one 15,000-square foot manufacturing building. The surrounding area is zoned for mixed industrial use. The property is abutted to the north by Converters, Inc. and Mallory Industries (CERCLIS No. CTD001148568), to the east by Edmunds Manufacturing Co. (CERCLIS No. CTD054187455), and to the south and west by wooded portions of residential properties (Figure 1B) [3, p. 10].

Dell is a manufacturing company which currently produces jet engine parts. The property can be accessed from the northeast using Right Lane. There are no fences or gates surrounding the property. Paved parking areas are located northeast and northwest of the manufacturing building; an active loading dock is located at the northwest corner of the building. The eastern, southern, and western perimeters of the property are wooded; the remainder of the property is covered by maintained lawns (Figure 2). The property slopes gradually from the northwest to the southeast. Surface water runoff from the property flows overland along a drainage swale to the south and west, and enters an unnamed, intermittent stream which flows south-southeasterly across the southwest corner of the property. There are no known monitoring wells on the Dell property [3, p. 10].

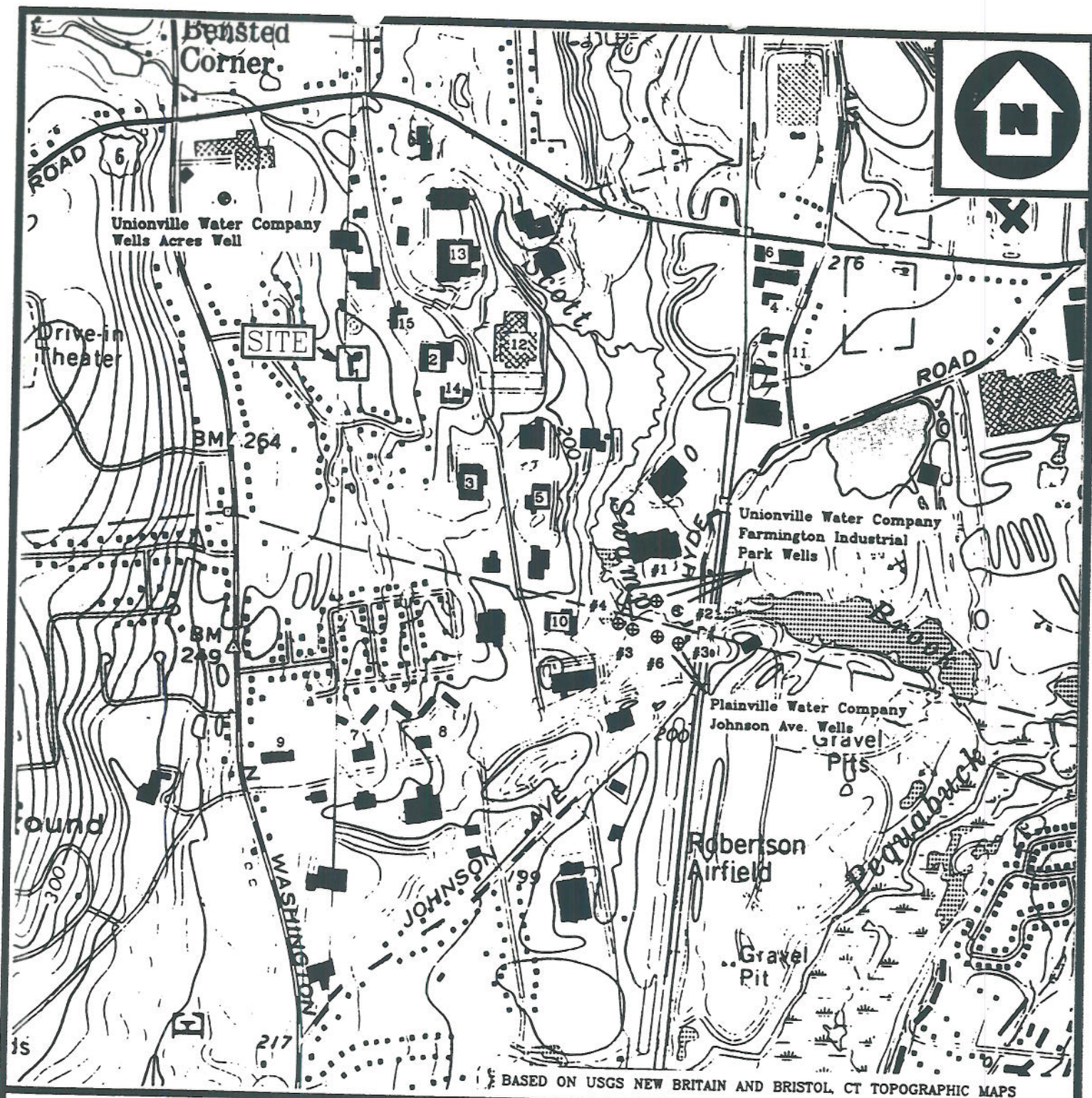
A 4,000-gallon waste oil/solvent underground storage tank (UST) is located on the north side of the manufacturing building. An abandoned septic system and associated leaching field, are also located on the property, north of the building. A drum storage area is located within a fenced area along the northwest side of the building; no drums were observed during the WESTON reconnaissance. An electrical transformer, placed on a concrete pad and surrounded by a chain-link fence, is located at the southeast corner of the building [3, p. 10]. A drywell is located south of the building. The exact size and depth of the drywell are unknown. The east wall of the building, which is adjacent to the machining area, is stained with oil. The staining appears on both the inside and outside of the cinderblock wall, indicating that the wall is not impervious to oil [3, p. 6]. No other staining was observed on the property during the WESTON reconnaissance.

The nearest residence to the property is located on Lot No. 25, approximately 280 feet south of the property, at 25 Wells Drive (Figure 2). The nearest drinking water well to the property is located 0.2 miles northwest of the property (Figure 1A) [4]. This well is known as the Wells Acres Well and is operated by the Unionville Water Company (UWC) [30].

OPERATIONAL AND REGULATORY HISTORY AND WASTE CHARACTERISTICS

Prior to development in 1967, the Dell property and surrounding properties were used for agricultural purposes. Dell is currently owned by Seragon Associates [1].

Dell is a manufacturer of jet engine parts. Processes used at the manufacturing building include general metal machining (drilling, turning, grinding, milling, and lathe work), painting, degreasing, cadmium plating, and acid etching. Acid etching of metal parts is accomplished by sequential baths of nitric acid, hydrochloric acid, and sodium hydroxide, with intermediate rinsing



LEGEND

- | | | |
|-------------------------------|-------------------------------------|---------------------------------------|
| 1 - Dell Manufacturing Co. | 7 - American Tool and Manufacturing | 13 - New England Aircraft Plant No. 1 |
| 2 - Edmunds Manufacturing Co. | 8 - Brown Manufacturing | 14 - New England Aircraft Plant No. 2 |
| 3 - Fletcher-Terry Company | 9 - ESCO Laboratories | 15 - Mallory Industries |
| 4 - Gros-ite Ind., Inc. | 10 - Mott Metallurgical Co. | |
| 5 - Kip, Inc. | 11 - Roy Machinery and Sales | |
| 6 - Whitnon-Spindle | 12 - Connecticut Spring & Stamping | NOT TO |

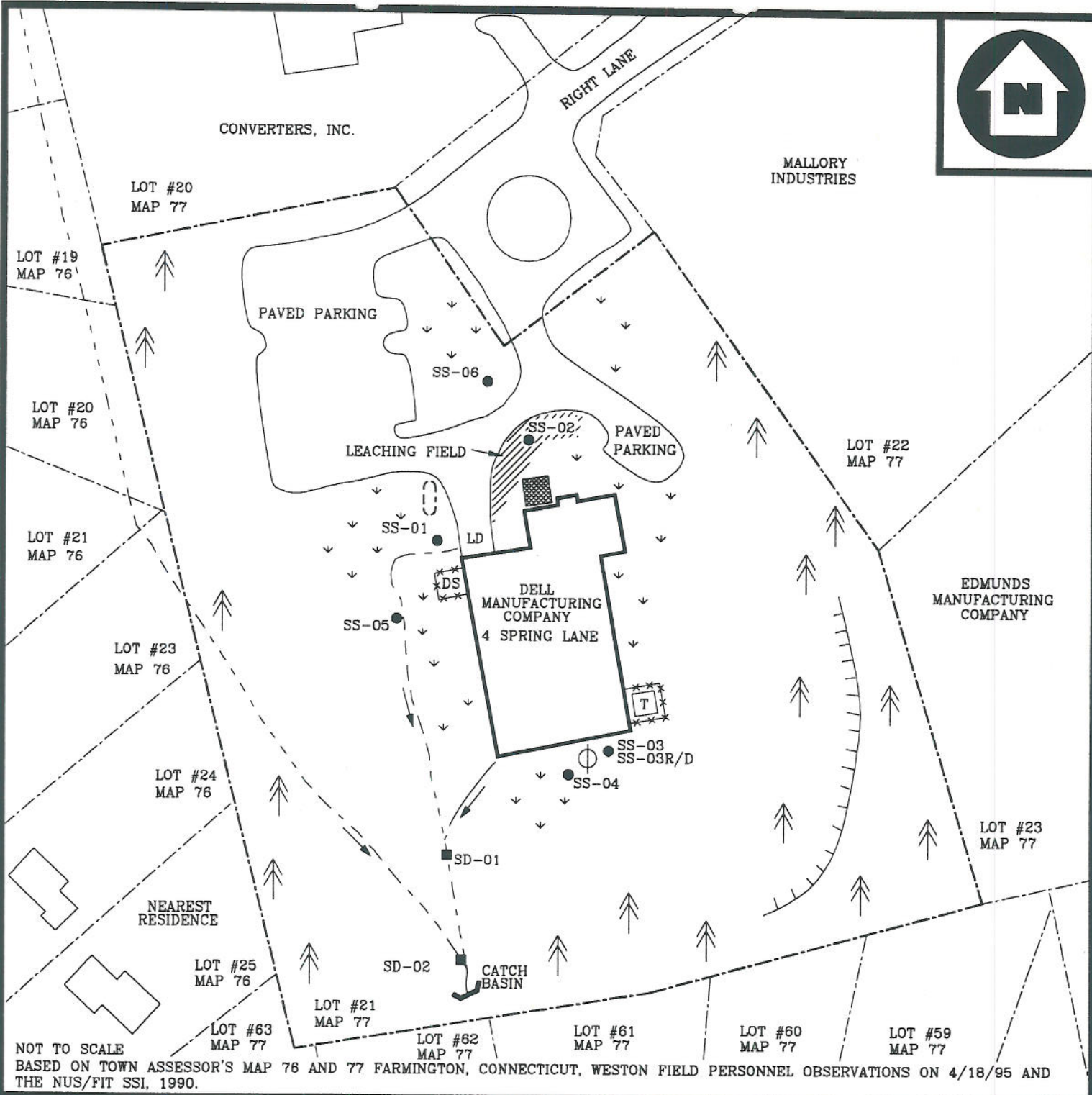
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AREA MAP

FARMINGTON INDUSTRIAL PARK PROPERTIES
FARMINGTON/PLAINVILLE, CONNECTICUT



FIGURE 1B



---	PROPERTY LINE	---	LEGEND	---	TICKS POINT DOWNSLOPE
- - -	SITE BOUNDARY	---	FENCED AREA	●	NUS/FIT SOIL SAMPLES COLLECTED ON AUGUST 7, 1989
- - -	DRAINAGE SWALE	---	SEPTIC TANK	■	NUS/FIT SEDIMENT SAMPLES COLLECTED ON AUGUST 7, 1989
→	DRAINAGE FLOW DIRECTION	---	TRANSFORMER	↑	WOODED AREA
⊕	DRYWELL	---	GRASS	DS	DRUM STORAGE AREA
---	4,000-GALLON UST	---	LOADING DOCK		

SITE SKETCH
DELL MANUFACTURING COMPANY
FARMINGTON, CONNECTICUT



baths [7]. Wastes generated by these processes include metal chips, cutting oils, water-soluble oils, 1,1,1-TCA degreaser, cadmium, potassium cyanide, and waste acids and bases contained in acid etching rinse waters [1].

Between 1970 and 1983, CT DEP conducted several inspections at the Dell property. In December 1970, CT DEP personnel noted that Dell disposed of two to three gallons of wastewater containing cadmium, potassium cyanide, nitric acid, and hydrochloric acid every two or three months to the on-site drywell. This wastewater was treated with a caustic to balance the pH prior to discharge to the drywell. It was further noted that no industrial wastewater treatment system was in place, indicating that the wastewater discharged to the drywell received no further treatment prior to discharge. Waste cooling water from the degreasing process was discharged to the drywell at an estimated rate of 2,000 gallons per day. The degreaser cooling water was noted to be "clean" water in the CT DEP report. In addition, waste 1,1,1-TCA associated with the degreaser cooling water was stored in a 500-gallon interior holding tank prior to removal from the property by Forestville Sanitation Service of Bristol, Connecticut. It is not known if Forestville Sanitation Service was a licensed waste hauler [6].

In February 1980, CT DEP personnel noted that processes at the manufacturing building had remained the same since 1970, but that the amount of waste generated had increased. Rinse waters containing nitric acid, hydrochloric acid, and sodium hydroxide were discharged to the drywell at an estimated rate of 25 gallons per month, and that the entire acid etching system was drained once each year, with an additional 200 gallons of wastewater discharged to the drywell at that time. Waste oils and 1,1,1-TCA were now removed from the property by Patrick's Waste Oil of Hartford, Connecticut [7].

On March 28, 1980, CT DEP informed Dell that the practice of discharging non-contact cooling water to Scott Swamp Brook required a National Pollutant Discharge Elimination System (NPDES) permit. Further, CT DEP indicated that the discharge of acid etching wastes to the drywell should stop, and suggested that these wastes be collected in a holding tank and subsequently disposed at an approved disposal facility [8]. On January 6, 1981, Dell informed CT DEP that etching wastes were being removed from the property by Liquacon Corporation of Thomaston, Connecticut [9].

On April 11, 1980, Dell applied to the CT DEP, Water Compliance Unit, for an NPDES permit, to discharge non-contact cooling water from Dell's degreasing and air compressor systems to Scott Swamp Brook [10]. On September 25, 1980, CT DEP granted Dell NPDES Permit No. CT0023647. The discharged water was to be monitored annually for temperature only [11].

In December 1980, Dell installed a 4,000-gallon UST on the north side of the manufacturing building which replaced the 500-gallon UST used to store waste oils at the property [12].

The CT DEP Annual Report for Small Quantity Generators of Hazardous Waste noted that the waste hauler Detrix hauled 1,120 pounds of trichloroethane waste from Dell in 1982, 200 pounds in 1983, and 155 pounds each year in both 1985 and 1986.

In January 1983, CT DEP personnel noted that the disposal of acid etching wastewaters to the drywell ended in Spring 1981, with the cessation of the acid etching process on-site.

Approximately 55-gallons per year (gpy) of waste 1,1,1-TCA was generated by degreasing processes, and approximately 30 pounds of paint waste (in the form of solidified sludge) was generated annually. The wastes were removed by Solvent Recovery Services (SRS). Approximately 2,000 gpy of waste water-soluble oils (synthetic oils and mineral oil) were collected in the 4,000-gallon UST and removed from the property by Patrick's Waste Oil [13].

Dell filed as a Small Quantity Generator with the CT DEP in 1982 (EPA ID CVS024248900 and CTD001139336). Dell has no interim RCRA status, and no RCRA permits have ever been issued to Dell.

In December 1988, NUS/FIT completed a Preliminary Assessment (PA) of the Dell property and reported that waste trichloroethane was containerized in 55-gallon drums for removal from the property, and waste water-soluble oil was stored in an UST prior to removal from the property.

In June 1990, NUS/FIT completed an SSI of the Dell property. Following an on-site reconnaissance, NUS/FIT personnel collected eight soil and two sediment samples from the Dell property to characterize on-site sources and to evaluate the possibility of releases to the environment from the sources. No volatile organic compounds (VOCs) were detected in any of the samples collected by NUS/FIT. Inorganic elements were detected in two soil samples and in two sediment samples collected from the property. The results of the SSI sampling are summarized in the Waste/Source Sampling section of this report. Complete analytical results of the NUS/FIT SSI sampling are included in Attachment A.

On April 18, 1995, WESTON conducted an on-site reconnaissance at the Dell property. Records of hazardous waste generation and shipping were reviewed by WESTON which indicate on-site manufacturing processes generate the following hazardous wastes: Gamma (cutting) Oil, water-soluble oil, hydraulic oil, spent Safety Kleen degreaser, 1,1,1-TCA, and very small amounts of various lubricating oils. Between 1992 and the present, waste Gamma Oil was generated at the rate of approximately 157 gpy; the waste oil was hauled off-site by National Oil Service. Between 1991 and the present, waste water-soluble oil, contaminated with small amounts of waste Gamma Oil, has been generated at a rate of approximately 3,135 gpy; also hauled by National Oil Service. One shipment of 160 gallons of waste hydraulic oil was recorded on December 22, 1993. In 1993 two shipments of waste 1,1,1-TCA, reportedly totalling 125 gallons, were transported off-site by General Chemical. According to Mr. James Wendell of Dell, the last shipment of 1,1,1-TCA was in March 1995, by General Chemical. Reportedly, 1,1,1-TCA is no longer used at the Dell manufacturing building. The 20 gallons of degreasing solvent in each Safety Kleen unit are shipped off-site as waste every two months. Prior to 1994, two Safety Kleen units were used at the manufacturing building; currently, three units are in use, generating waste at a total rate of 360 gpy [3, pp. 4-7].

On July 12, 1995, WESTON collected environmental samples of groundwater, sediment, and surface water at locations upgradient and downgradient of the Dell property. The results of this sampling event are summarized in the Groundwater and Surface Water Pathway sections of this report, and the complete analytical results are included in Attachment B. Table 1 presents identified structures or areas on the Dell property that are documented or potential sources of contamination, the containment factors associated with each source, and the relative location of each source [1; 3, pp. 1-7].

Table 1

Source Evaluation for Dell Manufacturing Company

Source Area	Containment Factors	Spatial Location
Waste Oil/Solvent UST (4,000-gallons)	No groundwater monitoring system in place; buried beneath more than two feet of soil; therefore, contained with regard to potential surficial, soil, and air releases.	North of manufacturing building.
Drum Storage Area	None.	Outside western side of the manufacturing building.
Septic System	Designed to release wastewater to groundwater without treatment; buried beneath more than two feet of soil; therefore, contained with regard to potential surficial, soil, and air releases.	North of the manufacturing building.
Drywell	Designed to release wastewater to groundwater without treatment; buried beneath more than two feet of soil; therefore, contained with regard to potential surficial, soil, and air releases.	South of the manufacturing building.
Contaminated Soil	None.	Based on soil sampling conducted by NUS/FIT.

Table 2 summarizes the types of potentially hazardous substances which have been disposed, used, or stored on the Dell property [1; 3, 1-7; 6; 7; 13].

Table 2

Hazardous Waste Quantity for Dell Manufacturing Company

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
1,1,1-TCA	Prior to 1982: unknown 1982: 1,120 lbs 1983: 200 lbs 1985: 155 lbs 1986: 155 lbs 1993: 1,250 lbs	1967 to March 1995	Unknown; reportedly disposed off-site by permitted Hazardous Waste transporters.	Waste Oil/Solvent UST; Drum Storage Area; possibly NPDES outfall

Table 2
Hazardous Waste Quantity for Dell Manufacturing Company
(concluded)

Substance	Quantity or Volume/Area	Years of Use/Storage	Years of Disposal	Source Area
Acid Etching Wastewater (containing nitric acid, hydrochloric acid, sodium hydroxide, cadmium, and potassium cyanide)	1970: 2 to 3 gal/2 months 1980: 25 gal/month	1967 to 1981	1967 to 1981	Drywell
Paint Waste	1983: 30 pounds	1967 to present	Disposed off-site by permitted Hazardous Waste transporters.	Drum Storage Area
Waste Oils	1983: 2,000 gal/year 1992: 250 gal 1994: 110 gal 1995: 110 gal	1967 to present	Disposed off-site by permitted Hazardous Waste transporters.	Waste Oil/Solvent UST
Waste Water-soluble Oils	1991: 6,125 gal 1993: 3,350 gal 1994: 3,200 gal 1995: 3,000 gal	1991 to present	Disposed off-site by permitted Hazardous Waste transporters.	Waste Oil/Solvent UST
Waste Cooling Water	Unknown	1967 to Unknown	Unknown	Drywell
Wastewater	Unknown	1967 to Unknown	Unknown	Septic System

As of July 1995, 21 CERCLA sites were located in Farmington, Connecticut and 17 CERCLA sites were located in Plainville, Connecticut. Of these sites, 26 were noted to be located within one mile of the FIP [15]. Edmunds Manufacturing Company, which abuts the Dell property to the east, is a RCRA large-quantity generator (CTD054187455). As of July 1995, 31 RCRA notifiers were located in Farmington, Connecticut and 47 RCRA notifiers were located in Plainville, Connecticut. Of these notifiers, 23 were noted to be located within one-mile of the FIP [16].

Table 3 presents a summary of properties located in the FIP which are the subject of current CERCLA SIP investigations being conducted by WESTON (Figure 1B). Table 3 also provides a description of the types of potentially hazardous substances which have been disposed, used, or stored on these properties.

Table 3

**Summary of Substances and Source Areas Associated with
Properties Located in the Farmington Industrial Park**

Property & CERCLIS No.	Type of Operation	Associated Substances	Years of Use and Storage	Years of Disposal	Source Areas
Dell Manufacturing Co. CTD001139336	Dell manufactures jet engine parts.	1,1,1-Trichloroethane (1,1,1-TCA) Acid etching wastewater Paint waste Waste oils Waste cooling water Wastewater	1967 to March 1995 1967 to 1981 1967 to present 1967 to present 1991 to present 1967 to unknown	Unknown 1967 to 1981 Off-site disposal Off-site disposal Unknown Unknown	UST; drum storage area Drywell Drum storage area 4,000-gallon UST Drywell Septic system
Edmunds Manufacturing Co. CTD054187455	Edmunds manufactures gauges for commercial and industrial uses.	Trichloroethylene (TCE) 1,1,1-TCA Untreated process rinse wastewaters Waste oil Plating wastes	1965 to unknown 1965 to unknown 1965 to 1980 1965 to unknown 1965 to 1980	1965 to unknown 1965 to unknown 1965 to 1980 1965 to unknown 1965 to 1980	Drywell; leach field Drywell; leach field 4,000-gallon UST 3,000-gallon UST UST
Fletcher-Terry Co. CTD001145309	Fletcher manufactures glass cutting tools.	Nitrating salts Waste rinse water Waste cutting oils Grinding sludge 1,1,1-TCA	1969 to unknown 1969 to unknown 1969 to unknown 1969 to unknown 1969 to unknown	1969 to 1975 1969 to 1975 1969 to 1982 1969 to unknown 1969 to 1980	Septic system Septic system Drywell Unknown Drywell
Gros-ite Industries, Inc. CTD982543670	Gros-ite manufactures aircraft parts, machines, machine prototypes, and environmental chambers.	Waste oils Tetrachloroethylene (PCE)	1954 to 1991 1954 to 1976	1954 to 1991 1954 to 1976	3,000 and 1,000-gallon UST Leach field to ground
KIP, Inc. CTD064844426	The KIP property was initially developed by the Sureline in November of 1969. From 1969 to 1974, Sureline produced experimental and reconditioned machinery. KIP has been manufacturing solenoid valves at this location since 1983.	TCE Cutting oils and sludge	Unknown 1969 to 1988 Unknown	Unknown 1969 to 1988 Unknown	Unknown 500-gallon UST; concrete UST; drywell 500-gallon UST; concrete UST; drywell

Table 3

**Summary of Substances and Source Areas Associated with
Properties Located in the Farmington Industrial Park
(continued)**

Property & CERCLIS No.	Type of Operation	Associated Substances	Years of Use and Storage	Years of Disposal	Source Areas
ESCO Laboratories CTD001139310	ESCO, also known as Perma-Type Rubber Company manufactures rubber surgical equipment and surgical cement.	Acetone	1969 to unknown	1969 to unknown	Rear of original building
		Chlorobutane	1969 to unknown	1969 to unknown	Rear of original building
		Ethyl alcohol	1969 to unknown	1969 to unknown	Rear of original building
		Methyl cyclohexane	1969 to unknown	1969 to unknown	Rear of original building
		Methyl iso-butyl ketone	1969 to unknown	1969 to unknown	Rear of original building
		Toluene	1969 to unknown	1969 to unknown	Rear of original building
		Methane	1969 to unknown	1969 to unknown	Rear of original building
		Butane	1969 to unknown	1969 to unknown	Rear of original building
		Propane	1969 to unknown	1969 to unknown	Rear of original building
		Hexane	1969 to unknown	1969 to unknown	Rear of original building
		TCE	1969 to unknown	1969 to unknown	Rear of original building
		1,1,1-TCA	Unknown to 1985	Unknown to 1985	Sanitary sewer
		Phthalate	Unknown	Unknown	Unknown
		Total Petroleum Hydrocarbon (TPH)	Unknown	Unknown	Unknown
Brown Manufacturing CTD001149038	Brown manufactures screw machine products.	1,1,1-TCA	1967 to 1983 1983 to 1987	1967 to 1983 Off-site disposal	Drywell Drum storage area
		Mineral Spirits	1967 to 1983 1983 to 1988 1988 to present	1967 to 1983 Off-site disposal Recycled on-site	Drywell Drum storage area Recycling still
		PCE	1967 to 1983 1983 to 1988 1988 to present	1967 to 1983 Off-site disposal Recycled on-site	Drywell Drum storage area Recycling still
		Cutting Oil	1977 to unknown Unknown to present	Off-site disposal Recycled on-site	2,000-gallon UST Oil extractor centrifuge

Table 3

**Summary of Substances and Source Areas Associated with
Properties Located in the Farmington Industrial Park
(continued)**

Property & CERCLIS No.	Type of Operation	Associated Substances	Years of Use and Storage	Years of Disposal	Source Areas
Whitnon-Spindle CTD052538105	Whitnon manufactures ballbearing and oil hydrostatic spindles.	Industrial waste stream (containing 1,1,1-TCA)	1955 to 1979 1979 to 1986 1979 to 1991	1955 to 1979 Off-site disposal Off-site disposal	Surface soil, drywell 1,000-gallon UST 2,000-gallon UST
		Water soluble coolant waste	1991 to present	Off-site disposal	2,000-gallon UST
		Scrap metal soaked with cutting oil	Unknown to present	Off-site disposal	30-yard open roll-off container
		Waste machine oil	1955 to 1979 1979 to present 1994 to present	Unknown Off-site disposal Off-site disposal	Unknown Drum storage area 1,000-gallon UST
American Tool & Manufacturing Corporation CTD001148949	American Tool performs general metal machining.	Trichloroethylene	1968 to 1980	1968 to 1980	Oil/water separator tank
		TPH	Unknown	Unknown	Septic system
Connecticut Spring and Stamping Corporation CTD001143007	CSSC manufactures coil and torsion springs and wire forms.	Acidic wastewater	1961 to 1974	1961 to 1974	SE septic tank and leach field
		Tumbling wastewater Heat quenching wastewater Tetrachloroethylene Trichloroethylene Waste oil Waste oil	1961 to 1974 1961 to 1974 1961 to 1974 1961 to present 1961 to unknown 1961 to 1972 1961 to present	1961 to 1974 1961 to 1974 1961 to 1974 Unknown 1961 to unknown Unknown Unknown	SE septic tank and leach field SE septic tank and leach field SE septic tank and leach field UST east of building UST east of building UST inside building UST northwest of building

Table 3

**Summary of Substances and Source Areas Associated with
Properties Located in the Farmington Industrial Park
(continued)**

Property & CERCLIS No.	Type of Operation	Associated Substances	Years of Use and Storage	Years of Disposal	Source Areas
Mallory Industries, Inc. CTD001148568	Mallory manufactures cams for aircraft and other industry.	Tumbling wastewater Water soluble oils Mineral spirits Alkaline soap solution Nitric acid Phosphoric acid Waste oil Solvents Waste oil	1965 to present 1965 to present 1965 to present 1965 to present 1965 to present 1965 to present 1983 to 1995 1983 to 1992 1976 to 1983	1965 to 1986 1965 to 1986 1965 to 1986 1965 to 1986 1965 to 1986 1965 to 1986 Unknown Unknown Unknown	Northeastern drywell Northeastern drywell Northeastern drywell Northeastern drywell Northeastern drywell Northeastern drywell Abandoned waste oil UST Abandoned waste solvent UST Removed waste oil UST
New England Aircraft Plant #1 CTD059831479	NEAP #1 manufactures jet aircraft engine blades and vanes.	Anti-rust compound Zyglo solution Fluorescent penetrant rinse waters Metal hydroxide sludge TPH TPH TPH and waste oil Sodium chloride	1961 to present 1961 to present 1961 to present 1961 to present Unknown Unknown 1977 to present 1961 to present	1961 to 1981 1961 to 1981 1961 to 1981 1961 to 1980 Unknown Unknown Unknown Unknown	Two septic systems Two septic systems Two septic systems Eastern parking lot Loading dock area Air compressor area Waste oil ASTs ECM treatment shed
New England Aircraft Plant #2 CTD982710535	NEAP #2 manufactured jet aircraft engine parts.	Spent chromic acid (CrO ₃) Waste solvents	1963 to 1976 1963 to 1976	1963 to 1976 1963 to 1976	Drywell Drywell
Roy Machinery and Sales CTD001143957	Roy performs general metal machining; paint spraying; cleaning; testing.	Unspecified industrial wastes Agitene	1957 to 1976 Unknown	1957 to 1976 Unknown	Septic system Ground west of building

Table 3

**Summary of Substances and Source Areas Associated with
Properties Located in the Farmington Industrial Park
(concluded)**

Property & CERCLIS No.	Type of Operation	Associated Substances	Years of Use and Storage	Years of Disposal	Source Areas
Mott Metallurgical Corp. CTD980524193	Mott manufactures sintered metallic filters.	1,1,1-TCA	1969 to 1975	1969 to 1975	Drywell
		MEK	1969 to 1975 1976 to 1981 1981 to present	1969 to 1975 Off-site disposal Off-site disposal	Drywell Two, 500-gallon USTs 1,000-gallon UST
		Acetone	1969 to 1975 1976 to 1981 1981 to present	1969 to 1975 Off-site disposal Off-site disposal	Drywell Two, 500-gallon USTs Drum storage area
		Propanol	1969 to 1975 1976 to 1981 1981 to present	1969 to 1975 Off-site disposal Off-site disposal	Drywell Two, 500-gallon USTs Drum storage area
		Waste machine oil	1979 to present	Off-site disposal	Drum storage area
		Phosphoric acid	1969 to 1975 1976 to 1981 1981 to present	1969 to 1975 Off-site disposal Off-site disposal	Drywell Two, 500-gallon USTs 1,000-gallon UST
		Nitric Acid	1969 to 1975 1976 to 1981 1981 to present	1969 to 1975 Off-site disposal Off-site disposal	Drywell Two, 500-gallon USTs 1,000-gallon UST
		Metal salts	1969 to 1975 1976 to 1981 1981 to present	1969 to 1975 Off-site disposal Off-site disposal	Drywell Two, 500-gallon USTs 1,000-gallon UST

WASTE/SOURCE SAMPLING

On August 7, 1989, NUS/FIT collected eight shallow (0 to 2 feet deep) soil and two sediment samples from the Dell property, including a reference soil sample (SS-06), a replicate/duplicate soil sample (SS-03 R/D), and a trip blank sample (SS-07) (Figure 2). Samples were submitted through the EPA Contract Laboratory Program (CLP) for VOC, semivolatile organic compound (SVOC), inorganic, and cyanide analyses [1, p. 7]. Pesticide and polychlorinated biphenyls (PCBs) analyses was not performed.

Soil sample SS-06 was chosen as a reference sample location because it is not associated with any known sources at the property, and was collected from an area which was apparently undisturbed by Dell operations. No appropriate reference sediment sample was collected by NUS/FIT during the SSI for sediment samples SD-01 and SD-02 [14]. Soil sample SS-05 was collected in the drainage swale upgradient of SD-01 and SD-02; however, this sample is subject to runoff from on-site source areas. Therefore, SS-05 could not be considered an appropriate upgradient reference sample for SD-01 and SD-02. Since no appropriate reference sediment sample was available, soil sample SS-06 was evaluated as the reference sample for the seven soil samples and the two sediment samples. For the purpose of this report, the drainage swale was evaluated as a source area with contaminated soil. Table 4 summarizes source samples collected on the Dell property [1, p. 7, Table 3].

Table 4

**Source Sample Summary: Dell Manufacturing Company,
Samples Collected by NUS/FIT on August 7, 1989**

Sample Location No.	Traffic Report No.	Time	Remarks	Sample Source
MATRIX: SOIL/SEDIMENT				
SS-01	AQ051 MAL767	11:25	Grab (1.5 feet)	Shallow soil sample collected downgradient of Waste Oil Tank.
SS-02	AQ052 MAL768	12:00	Grab (1.5 feet)	Shallow soil sample collected downgradient of the former septic system.
SS-03	AQ053 MAL769	13:50	Grab (2 feet)	Shallow soil sample collected south of manufacturing building.
SS-03 R/D	AQ054 MAL770	13:50	Grab (2 feet)	Duplicate sample of SS-03 collected for quality control.
SS-04	AQ055 MAL771	15:05	Grab (1 foot)	Shallow soil sample collected in the vicinity of the former drywell.

Table 4

**Source Sample Summary: Dell Manufacturing Company,
Samples Collected by NUS/FIT on August 7, 1989
(concluded)**

Sample Location No.	Traffic Report No.	Time	Remarks	Sample Source
SS-05	AQ056 MAL813	15:30	Grab (0.5 feet)	Sediment sample collected from on-site drainage swale, downgradient of Waste Oil Tank but upgradient of the former drywell and non-contact cooling water outfall.
SS-06	AQ057 MAL814	13:30	Grab (2 feet)	Shallow soil sample collected from the north side of the property, from a presumably undisturbed location.
SS-07	AQ058	NL	Grab	Trip Blank sample collected for quality control.
SD-01	AQ059 MAL815	16:15	Grab (0.5 feet)	Sediment sample collected at the non-contact cooling water outfall to the drainage swale.
SD-02	AQ060 MAL816	16:10	Grab (0.5 feet)	Sediment sample collected from the on-site drainage swale, downgradient of the non-contact cooling water outfall.

R/D = Replicate/Duplicate.

NL = Not Listed.

Table 5 is a summary of organic compounds and inorganic elements detected through CLP analyses of NUS/FIT source samples [1, Attachments C and D]. For each sample location, a compound or element is listed if it was detected at three times or greater than the reference sample concentration (SS-06). However, if the compound or element was not detected in the reference sample, the reference sample's quantitation limit (SQL) (for organic analyses) or detection limit (SDL) (for inorganic analyses) is used as the reference value. These compounds or elements are listed if they occurred at a value equal to or greater than the reference sample's SQL or SDL and are designated by their approximate relative concentration above these values.

No organic compounds were detected in any of the soil samples collected by NUS/FIT on the Dell property; two inorganic elements, calcium and selenium were detected in soil sample SS-04, which was collected from the vicinity of the drywell [1]. Three inorganic elements; copper, lead, and selenium were detected in soil sample SS-05; four inorganic elements; arsenic, chromium, copper, and lead were detected in sediment sample SD-01; and four inorganic elements; calcium, copper, lead, and zinc were detected in sediment sample SD-02. The complete analytical results of the NUS/FIT SSI sampling are included in Attachment A.

Table 5

**Summary of Analytical Results,
Source Sample Analysis for Dell Manufacturing Company:
Samples Collected by NUS/FIT on August 7, 1989**

Sample Location	Compound/Element	Sample Concentration	Reference Concentration	Comments
SS-04 (AQ055) (MAL771)	INORGANICS			
	Calcium	2,440 ppm	11.76 ppm	207 × REF
	Selenium	0.31 J ppm	0.20 UJ ppm	1.55 × SDL
SS-05 (AQ056) (MAL813)	INORGANICS			
	Copper	81.8 ppm	6.90 ppm	11.85 × REF
	Lead	61.7 J ppm	13.30 J ppm	4.6 × REF
	Selenium	0.31 J ppm	0.20 UJ ppm	1.55 × SDL
SD-01 (AQ059) (MAL815)	INORGANICS			
	Arsenic	12 ppm	2.40 ppm	5.0 × REF
	Chromium	76.4 J ppm	16.60 J ppm	4.6 × REF
	Copper	462 ppm	6.90 ppm	66.95 × REF
	Lead	195 J ppm	13.30 J ppm	14.66 × REF
SD-02 (AQ060) (MAL816)	INORGANICS			
	Calcium	3310 ppm	665 ppm	4.98 × REF
	Copper	92.6 ppm	6.90 ppm	13.42 × REF
	Lead	82.3 J ppm	13.30 J ppm	6.19 × REF
	Zinc	142 ppm	38.1 ppm	3.73 × REF

J = The associated numerical value is an estimated quantity.

ppm = Parts per million.

REF = Reference value.

SDL = Sample Detection Limit.

UJ = The sample quantitation limit is an estimated quantity.

Several substances detected in NUS/FIT on-site samples were J'd or estimated. WESTON has included the detected concentrations of these substances in Table 5 to remain consistent with technical directives provided by EPA Region I.

It is unlikely that the soil samples collected by NUS/FIT were collected deep enough to characterize the drywell, UST, and the former septic system. No other soil samples have been collected at the property which would characterize the potential source areas.

GROUNDWATER PATHWAY

Soil maps for Hartford County report the soil type at the Dell property as Manchester Gravelly Loam [61]. Prior to 1967, the property was used as farm land [5]. Average rainfall for the Town of Farmington is 49.06 inches per year [17].

The surficial geology of the area beneath the Dell property has been mapped as glacial collapsed stratified drift deposits [19]. These deposits are associated with deltaic deposits comprised of stratified sand and gravel, overlying glacial till. The occurrence of sand and gravel in the deposits indicate that the overburden permeability at the site is moderate to high [1, p. 6; 8]. The underlying glacial till is presumed to be present continuously beneath sand and gravel throughout the Pequabuck River valley within a two-mile radius of the property, based on its occurrence in all of the boring logs for monitoring wells installed in the vicinity of Scott Swamp Brook and the Pequabuck River [21, Appendix 1].

The bedrock geology beneath the property has been mapped as the Triassic New Haven Arkose, which makes up a large part of the Central Lowlands of Connecticut. The New Haven Arkose is a reddish, poorly-sorted sandstone and conglomerate. This central region of Connecticut contains several large fault zones that strike approximately North 50° East, with dip angles near vertical [20]. An inactive private groundwater production well, located approximately 2,660 feet southeast of the Dell property, is completed in bedrock at a depth of approximately 165 feet below ground surface (bgs). The well was noted to exist under flowing artesian conditions (with a potentiometric surface above the ground surface) by WESTON personnel on April 17, 1995 [22, p.; 23, p. 48]. The top of the overburden water table at this location is approximately 30 feet bgs [22]. These observations indicate that the potentiometric surface in the bedrock is greater than that in the overburden by at least 30 feet. Therefore, any groundwater flow between the two units would tend to be from the higher potentiometric surface to the lower, in this case, from bedrock to overburden [23, pp. 21, 48-49].

Approximately 0.25 miles east of the Dell property, overburden becomes much thicker, and a glaciolacustrine varved silt and clay unit, between 86 to 205 feet thick and one mile wide, occurs within the overburden. This layer partially separates unconfined and confined portions of the Pequabuck River valley overburden aquifer [21, pp. 22, Figure 7]. Although the silt and clay layer strongly restricts groundwater flow between the two parts of the overburden aquifer, aquifer tests have demonstrated an interconnection between the unconfined and confined parts of the overburden aquifer, in particular in the stratified drift deposits located north and west of the Farmington Industrial Park (FIP) and Johnson Avenue wells [21, p. 22]. The Dell property is located above stratified drift deposits northwest of these wells, in an area noted to be a recharge area for the lower portion of the Pequabuck River valley overburden aquifer [21, p. 22]. Further, since the silt and clay layer is not present beneath the Dell property, the silt and clay layer does not meet the CERCLA definition of a confining layer [27, p. 51601; 21, Figure 7].

Typical hydraulic conductivities for sand and gravel range from 10^{-4} to 10^{-2} centimeters per second (cm/s), typical hydraulic conductivities for glacial till range from 10^{-6} to 10^{-4} cm/s, and typical hydraulic conductivities for fractured sedimentary rock are approximately 10^{-4} cm/s [27, p. 51601]. For the purposes of this report, the glacial till which underlies the Pequabuck River valley overburden aquifer is considered to constitute a continuous, low-permeability layer which

separates overburden and bedrock aquifers beneath the property and throughout the aquifer [27, p. 51601]. Further, the observed hydraulic gradient between the overburden and bedrock aquifers in the vicinity of the FIP indicates that any groundwater flow between the two aquifers would be primarily from bedrock to overburden [22, p. 5; 23, pp. 21, 48-49].

The Pequabuck River valley overburden aquifer, in the vicinity of Scott Swamp Brook, is bordered to the west by collapsed stratified drift, kame, and glacial till deposits, to the east by bedrock outcrops. The Pequabuck River valley overburden aquifer begins at the Quinnipiac River valley in the south, and terminates beneath the Farmington River in Avon, Connecticut [21, p. 22]. The direction of groundwater flow within the Pequabuck River valley overburden aquifer during the pumping of the public water supply wells located southeast of the Dell property radially toward these wells. Beneath the Dell property, the direction of groundwater flow is east-northeast, eventually turning south and flowing toward the FIP and Johnson Avenue wells [21, Figure 9]. Depth to groundwater beneath the Dell property is estimated at 20 to 30 feet below ground surface.

All or part of the following Connecticut cities and towns are located within four radial miles of the FIP properties: Bristol (population 60,640), Burlington (population 7,026), New Britain (population 72,513), Farmington (population 20,608), Plainville (population 17,197), and Southington (population 38,000) [24, pp. 63-64; 28; 44; 45; 42; 43].

The Bristol Water Department (BWD) of the Town of Bristol operates two separate public water supplies. One is located in the western part of the town, and relies on combined groundwater and surface water sources located more than four-radial miles and 15-downstream miles from the property [25, p. 50; 28; 29]. The second supply is located in the northeastern part of the town and serves 20,000 persons. The supply obtains water from four wells located within four miles of the property. Well No. 2 is drilled in overburden 75 feet deep and is located approximately 2.2 miles southwest of the property, and supplies 50 percent of the total supply [25, p. 50; 28; 29]. The other 50 percent of the supply (no further breakdown is available) is obtained from the three Mix Street Wells, which are overburden wells, 55 feet deep, and are located approximately 2.5 miles west of the property [25, p. 50; 28; 29]. For the purposes of this report, the three Mix Street Wells are assumed to contribute equally to the system, and each serve 3,334 persons [28]. The remainder of the population of Bristol is presumed to rely on private drinking water wells and groundwater sources from outside of the four mile radius to the property.

A small section of the southeast corner of the Town of Burlington is located within the four mile target distance limit. No major public water supplies have been identified in this area; however there are two community water supplies in that area of Burlington: the Farmington Line West Condominium well, 2.6 miles northwest of the property, as well as, the Woodcrest Association well, which is 2.7 miles northwest of the property. The wells serve 34 and 60 persons, respectively; no data regarding depth is available [26; 28; 33; 34]. Much of the Town of Burlington relies on private wells.

Four public water supplies provide drinking water to most of the residents of Farmington [35]. The New Britain Water Department (NBWD) supplies water to an estimated 90,677 persons, including residents of Farmington, Kensington, New Britain, Newington and Plainville. The supply is provided from seven groundwater wells and six reservoirs which are not located

downstream of the FIP properties [25, p. 51; 46]. One pair of overburden groundwater wells, known as the White Bridge wells and operated by the NBWD, are located approximately 2.1 miles west of the property [28; 46]. The White Bridge wells provide 28.6 percent of the total annual water supply for NBWD, and serve 25,900 persons.

The Metropolitan District Commission (MDC) supplies water to some residents of Farmington, as well as other communities in the greater Hartford area. The supply is provided from reservoirs which are not located downstream of the FIP properties [25, pp. 35, 36; 35].

The Plainville Water Company (PWC) provides drinking water to residents of Farmington and Plainville. The PWC maintains a blended system of five overburden wells which serves a total of 20,000 people. Prior to distribution, water from these wells is air-stripped. The two PWC overburden wells located between 0.58 and 0.61 miles southeast of the property are known as the Johnson Avenue Wells and account for 27.4 percent of the system's annual total water supply, and serve an estimated 5,480 persons [28]. These wells are screened in the lower portion of the Pequabuck River valley overburden aquifer, at depths of 80 to 93 and 92 to 110 feet bgs, respectively [21, Appendix 1]. The three PWC wells located 2.25 miles southeast of the property are known as the Woodford Avenue Wells and supply 72.6 percent of the system's annual total water supply, serving an estimated 14,520 persons [25, p. 51; 28; 37; 36; 38]. These wells are also screened in the Pequabuck River valley overburden aquifer, at a point upgradient of the FIP area [25, p. 51; 21, Figures 3 and 5].

The Unionville Water Company (UWC) provides drinking water to many residents in Farmington. The UWC system consists of eight wells at four locations in Farmington. Of these eight wells, all except four of the five Charles House Wells are located within four miles of the Dell property. The system serves a total of 12,700 persons [26]. Calculations for apportionment of service population to the wells are based on the total annual contribution to the system [25, p. 35; 28; 30; 38; 39]. None of these wells are completed in the Pequabuck River valley overburden aquifer, although the Wells Acres well, which is screened in bedrock, is located only 0.2 miles northwest of the Dell property [25, p. 51]. The Wells Acres well was sampled by WESTON personnel on July 12, 1995; the analytical results from the well are discussed in the Groundwater Section of this report [3, p. 16].

The UWC also maintains four wells which provide water to the FIP. Available information suggests that this water is used for both manufacturing processes at the FIP and for potable purposes. Several businesses in the FIP use bottled drinking water. The wells serve an estimated 1,026 workers at businesses within the FIP [47]. The wells are located immediately southeast of the FIP (Figure 1B) [25, p. 35; 28; 39]. The annual contribution of each well to the system is based on 1994 annual production figures [28; 40]. All four of the wells are screened in the lower portion of the Scott Swamp Brook valley overburden aquifer [21, pp. 3-4]. The UWC also maintains the Connecticut Sand & Stone Well located in Farmington, 2.8 miles northeast of the property which serves an estimated 2,792 persons.

The NBWD supplies water to some residents of New Britain, as well as Farmington, Kensington, Newington and Plainville. The supply is provided from six reservoirs which are not located downstream of the FIP properties [25, p. 51; 37].

Most of Plainville is provided drinking water by the PWC and the NBWD. The Cope Manor rest home maintains a bedrock well which provides drinking water to an estimated 92 patients and staff and is located approximately 1.5 miles southwest of the property [26; 41]. Ciccio Court Apartments, located approximately 3.3 miles south of the property, also maintains a well in Plainville serving an estimated 80 people [25, p. 35; 26].

Parts of Southington lie within four radial miles of the Dell property, but there are no Southington public water supplies that are located within the four radial miles of the Dell property. One community water supply is located approximately 3.6 miles south of the property at Apple Valley Village Apartments, serving an estimated 70 people [25, p. 50, 51; 26; 33]. Table 6 summarizes public groundwater supply sources located within four radial miles of the Dell property [25, pp. 35, 36, 50, 51; 28; 26; 44; 45; 42; 43].

Table 6

**Public Groundwater Supply Sources within Four Radial Miles of
Dell Manufacturing Company**

Distance/ Direction from Site	Source Name	Location of Source	Estimated Population Served	Source Type
0.20 miles Northwest	UWC Wells Acres	Farmington	457	1 bedrock well
0.51 miles Southeast	FIP Well No. 4	Plainville	477	1 overburden well
0.53 miles Southeast	FIP Well No. 3	Plainville	547	1 overburden well
0.54 miles Southeast	FIP Well No. 1	Farmington	2	1 overburden well
0.60 miles Southeast	FIP Well No. 2	Farmington	0	1 overburden well
0.58 miles Southeast	PWC Johnson Avenue Well No. 6	Plainville	2,740	1 overburden well
0.61 miles Southeast	PWC Johnson Avenue Well No. 3	Plainville	2,740	1 overburden well
1.50 miles Southwest	Cope Manor	Plainville	92	1 bedrock well
2.10 miles West	NBWD White Bridge Wells	Bristol	25,900	2 overburden wells
2.20 miles Southwest	BWD Well No. 2	Bristol	10,000	1 overburden well
2.25 miles Southeast	PWC Woodford Avenue Wells	Plainville	14,520	3 overburden wells
2.50 miles West	BWD Mix Street Wells	Bristol	10,000	3 overburden wells
2.60 miles Northwest	Farmington Line West Condominium	Burlington	34	Unknown
2.60 miles Northwest	UWC Pondwood Well	Farmington	406	1 bedrock well
2.70 miles Northwest	Woodcrest Association	Burlington	60	Unknown
2.80 miles Northeast	UWC CT Sand & Stone Well	Farmington	2,792	1 overburden well

Table 6

**Public Groundwater Supply Sources within Four Radial Miles of
Dell Manufacturing Company
(concluded)**

Distance/ Direction from Site	Source Name	Location of Source	Estimated Population Served	Source Type
3.30 miles South	Ciccio Court	Plainville	80	Unknown
3.60 miles South	Apple Valley Village	Southington	70	Unknown
3.95 miles Northwest	UWC Charles House Wells	Farmington	1,773	1 of 5 overburden wells

The number of persons who rely on private groundwater supplies within a four-mile radius of the FIP was reported by CENTRACTS which estimates groundwater populations using equal distribution calculations of U.S. Census data identifying population, households and private water wells for "Block Groups" which lie wholly or in part within individual radial distance rings measured from potential sources on the Dell property [18]. The nearest verified private well to the property is located approximately 1.2 miles northwest of the Dell property (Figure 1A) [3, pp. 9-10]. Because the CENTRACTS report estimates private well use in each block and no private wells have been identified less than one mile from the property, the population attributed to the 0 to 0.25, the 0.25 to 0.5, and the 0.5 to 1.0 mile rings in the CENTRACTS report has been shifted to the 1.0 to 2.0-mile distance ring. Table 7 summarizes the private well users within four miles of the Dell property [18; 25, pp. 35, 36, 50, 51; 28; 26].

Table 7

**Estimated Drinking Water Populations Served by Groundwater Sources
within Four Radial Miles of Dell Manufacturing Company**

Radial Distance from Dell Mfg. Co. (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Public Wells	Total Estimated Population Served by Groundwater Sources within the Ring
0.00 < 0.25	0	457	457
0.25 < 0.50	0	0	0
0.50 < 1.00	0	6,506	6,506
1.00 < 2.00	1,441	92	1,533
2.00 < 3.00	2,859	63,712	66,571
3.00 < 4.00	3,515	1,923	5,438
TOTAL	7,815	72,690	80,505

According to State file information, the Connecticut Department of Health Services (CT DHS) initially collected and analyzed samples from the four FIP wells and Johnson Avenue well No. 3 in June 1975. Available records indicate that the Johnson Avenue well No. 6 was first sampled in June 1982.

Analytical results from the June 1975 sampling round of the four FIP wells and Johnson Avenue well No. 3 indicated the presence of several VOCs at concentrations ranging from 20 to 1,000 parts per billion (ppb). The compounds present at the highest concentrations from the June 1975 sampling round included 1,1,1-TCA at 1,000 ppb, chloroform at 680 ppb, tetrachloroethylene (PCE) at 640 ppb, and trichloroethylene (TCE) at 430 ppb. The highest concentrations of TCA, TCE, and chloroform were noted in samples collected from Johnson Avenue well No. 3, and the highest concentration of PCE was detected in the sample collected from FIP well No. 4.

Samples have been collected from the six affected wells intermittently from 1975 to the present, with the exception of Johnson Avenue well No. 6, for which no analytical results are available prior to 1982 [1, p. 6]. A summary of these analytical results, through 1989, is included in Attachment C.

The concentration of chlorinated organics in the wells has generally decreased since their discovery in 1975, but were still present as of the latest sampling round conducted in the spring of 1995 [1, Attachment B; 31; 32]. The most recent analytical results available for the FIP wells and the Johnson Avenue wells are included in Attachment D.

Table 8 summarizes the results of sampling of the FIP and Johnson Avenue wells [1, Attachment B; 31; 32]. The first data column notes the highest concentration of the substance and the sampling date. The second data column records the concentration of the same substance as detected in the most recent sampling event, in order to illustrate the trend of concentrations.

Table 8

**Summary of Substances Detected in Drinking Water Wells
in the Vicinity of the Farmington Industrial Park**

Well	Substance	Highest Concentration/Date	Most Recent Concentration/Date	EPA MCL
FIP No. 1	chloroform	20 ppb 6/2/75	NS	---
	1,1,1-TCA	ND	NS	200 ppb
	TCE	200 ppb 6/2/75	NS	5 ppb
	PCE	ND	NS	5 ppb
FIP No. 2	chloroform	60 ppb 6/2/75	NS	---
	1,1,1-TCA	ND	NS	200 ppb
	TCE	85 ppb 6/2/75	NS	5 ppb
	PCE	160 ppb 6/2/75	NS	5 ppb

Table 8

**Summary of Substances Detected in Drinking Water Wells
in the Vicinity of the Farmington Industrial Park
(concluded)**

Well	Substance	Highest Concentration/Date		Most Recent Concentration/Date		EPA MCL
FIP No. 3	chloroform	97 ppb	6/2/75	ND	1/11/95	---
	1,1,1-TCA	46 ppb*	3/20/80	4.1 ppb	1/11/95	200 ppb
	TCE	36 ppb	6/2/75	0.86 ppb	1/11/95	5 ppb
	PCE	73 ppb	6/2/75	1.2 ppb	1/11/95	5 ppb
FIP No. 4	chloroform	77 ppb	6/2/75	ND	10/28/94	---
	1,1,1-TCA	25 ppb*	2/29/80	4.9 ppb	10/28/94	200 ppb
	TCE	53 ppb	6/2/75	0.95 ppb	10/28/94	5 ppb
	PCE	640 ppb	6/2/75	1.5 ppb	10/28/94	5 ppb
Johnson Avenue Well No. 3	chloroform	680 ppb	6/2/75	ND	1/17/95	---
	1,1,1-TCA	1,000 ppb	6/20/75	19.7 ppb	1/17/95	200 ppb
	TCE	900 ppb	7/22/75	4.9 ppb	1/17/95	5 ppb
	PCE	60 ppb	6/2/75	14.0 ppb	1/17/95	5 ppb
Johnson Avenue Well No. 6	chloroform	ND		ND	1/17/95	---
	1,1,1-TCA	12.8	4/19/88	3.5 ppb	1/17/95	200 ppb
	TCE	34.8 ppb	9/6/88	21.0 ppb	1/17/95	5 ppb
	PCE	5.8 ppb	12/22/86	3.1 ppb	1/17/95	5 ppb

ND = Not Detected.

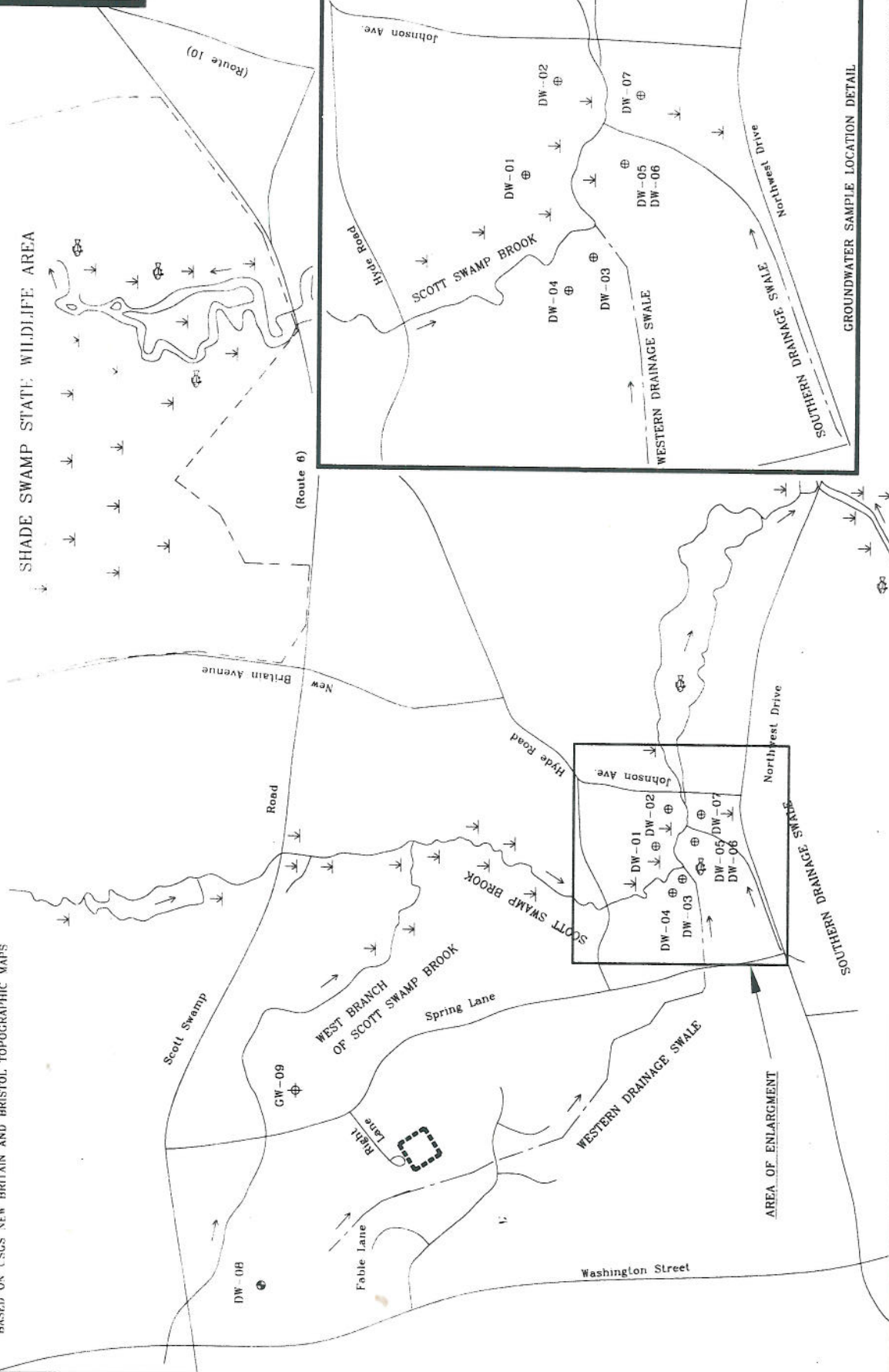
NS = Not Sampled.

--- = No Value Listed.

* = A higher concentration of 1,1,1-TCA, 101 ppb, was detected in a composite sample of water from FIP Well Nos. 3 and 4 on October 3, 1983.

EPA MCP = EPA Maximum Contaminant Level.

On July 12, 1995, WESTON collected eleven groundwater and drinking water samples from monitoring wells and public supply wells in the vicinity of the FIP, including a reference groundwater sample (GW-09), replicate/duplicate samples (GW-03/04), a rinsate blank sample (RB-02), and a trip blank sample (TB-01) (Figure 3). Samples were submitted through the EPA CLP for VOC, SVOC, Pesticide/PCB, inorganic, and cyanide analyses. The VOC fraction of the samples was analyzed to lower detection limits by EPA Method 524.2 by the EPA Regional Laboratory [3, p. 39-40].



SAMPLE LOCATIONS NOT TO SCALE

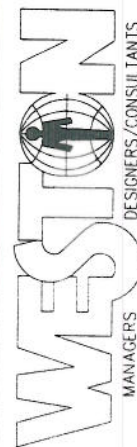


FIGURE 3

GROUNDWATER
SAMPLE LOCATION MAP
DELL MANUFACTURING COMPANY
FARMINGTON INDUSTRIAL
PARK PROPERTIES
FARMINGTON/PLAINVILLE, CONNECTICUT

Groundwater sample GW-09 was selected as a reference sample because it was collected from monitoring well MW-1 on the New England Aircraft Plant No. 1 property, which is located upgradient of potential sources of groundwater contamination identified within the vicinity of the FIP, including the New England Aircraft Plant No. 1 property [48]. None of the groundwater or drinking water samples collected by WESTON were filtered prior to collection. Table 9 summarizes the groundwater and drinking water samples collected during the WESTON FIP sampling event and Figure 3 shows the sampling locations [3, pp. 39-40].

Table 9

**Sample Summary: Dell Manufacturing Company,
Groundwater and Drinking Water Samples Collected by WESTON on July 12, 1995**

Sample Location No.	Traffic Report No.	Time	Remarks	Sample Source
MATRIX: AQUEOUS				
DW-01	DAR73 AHF21 MAGL38	10:15	Grab	Drinking water sample collected from FIP Well No. 1.
DW-02	DAR74 AHF22 MAGL39	11:15	Grab	Drinking water sample collected from FIP Well No. 2.
DW-03	DAR75 AHF23 MAGL40	09:45	Grab	Drinking water sample collected from FIP Well No. 3.
DW-04	DAR76 AHF24 MAGL41	10:05	Grab	Drinking water sample collected from FIP Well No. 4.
DW-05	DAR77 AHF25 MAGL42	14:00	Grab	Drinking water sample collected from PWC Johnson Avenue Well No. 6
DW-06	DAR78 AHF26 MAGL43	14:00	Grab	Duplicate of sample DW-05 collected for quality control.
DW-07	DAR79 AHF27 MAGL44	14:15	Grab	Drinking water sample collected from PWC Johnson Avenue Well No. 3.
DW-08	DAR80 AHF28 MAGL45	09:15	Grab	Drinking water sample collected from the UWC Wells Acres Well.
GW-09	DAR81 AHF29 MAGL46	12:55	Grab	Groundwater sample collected from monitoring well MW-01 on the New England Aircraft Plant No. 1 property, as a reference sample.
TB-02	DAR83	08:55	Grab	Rinsate Blank sample collected for quality control.
RB-02	DAR82 AHF33 MAGL50	09:00	Grab	Trip Blank sample collected for quality control.

Table 10 is a summary of organic compounds and inorganic elements detected through CLP analyses of drinking water samples collected by WESTON on July 12, 1995 [49; 63; 64]. For each sample location, a compound or element is listed if it was detected at three times or greater than the reference sample concentration (GW-09). However, if the compound or element was not detected in the reference sample, the reference SQL (for organic analyses) or SDL (for inorganic analyses) is used as the reference value. These compounds or elements are listed if they occurred at a value equal to or greater than the reference sample's SQL or SDL and are designated by their approximate relative concentration above these values.

Table 10
Summary of Analytical Results,
Drinking Water Sample Analysis for Dell Manufacturing Company:
Samples Collected by WESTON on July 12, 1995

Sample Location	Compound/Element	Concentration	Reference Concentration	Comments
DW-01 AHF21 MAGL38 DAR73	VOCS			
	1,1,1-TCA	31 µg/L	2 U µg/L	15.50 × SQL
	TCE	4.2 µg/L	2 U µg/L	2.10 × SQL
	SVOCS			
	Naphthalene	2.4 µg/L	2 U µg/L	1.20 × SQL
DW-02 AHF22 MAGL39 DAR74	VOCS			
	1,1-DCE	2.1 µg/L	2 U µg/L	1.05 × SQL
	1,1,1-TCA	16 µg/L	2 U µg/L	8.00 × SQL
	TCE	4.9 µg/L	2 U µg/L	2.45 × SQL
	cis-1,2-DCE	6.6 µg/L	2 U µg/L	3.30 × SQL
	PCE	25 µg/L *	2 U µg/L	12.50 × SQL
DW-03 AHF23 MAGL40 DAR75	VOCS			
	1,1,1-TCA	4.9 µg/L	2 U µg/L	2.45 × SQL
DW-04 AHF24 MAGL41 DAR76	VOCS			
	cis-1,2-DCE	10 µg/L	2 U µg/L	5.00 × SQL
	PCE	2.7 µg/L	2 U µg/L	1.35 × SQL
DW-05 AHF25 MAGL42 DAR77	VOCS			
	TCE	13 µg/L *	2 U µg/L	6.50 × SQL
	cis-1,2-DCE	5.6 µg/L	2 U µg/L	2.80 × SQL